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EGGPLANT INSECT PESTS & DISEASES

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Insect Pests

Aphids and Whiteflies

Aphids and whiteflies both have piercing, sucking mouthparts used to suck the sap out of eggplant leaves and stems. Both pests are primarily found on the undersides of the leaves. As they feed, they secrete a sticky waste known as honeydew. Dark-colored sooty mold often develops on the honeydew, which reduces the plant's ability to photosynthesize. The silverleaf whitefly (*Bemisia argentifolii*) is the predominant species of whitefly that affects eggplant, and the green peach aphid (*Myzus persicae*) is the predominant aphid species.

Flea Beetles

Eggplant is a favorite host of multiple species of flea beetles, which are mostly in the genus *Epitrix*. Flea beetles have chewing mouthparts and feed on leaves, making small, shot-like holes. Their damage is most serious when the plants are small and have just a few leaves. Once the plants are larger, a fair amount of injury can be tolerated.

Shot-hole feeding damage caused by flea beetles on eggplant foliage.
Joey Williamson, ©2014 HGIC, Clemson Extension

Colorado Potato Beetle

Colorado potato beetle (*Leptinotarsa decemlineata*) larvae and adults feed on eggplant foliage with their chewing mouthparts. Populations can build up quickly and cause significant defoliation and yield loss. In small gardens, adults and larvae are easy to handpick and squish or drop in a bottle of soapy water. In larger gardens, chemical control may be necessary.

Colorado potato beetle larvae feeding on eggplant foliage.
Justin Ballew, ©2020, Clemson Extension

An adult Colorado potato beetle feeding on an eggplant leaf.
Justin Ballew, ©2020, Clemson Extension

Hornworms

Tobacco hornworms are harmless and can easily be removed by hand.
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Tobacco hornworms (*Manduca sexta*) and tomato hornworms (*Manduca* quinquemaculata) are large caterpillars capable of rapidly eating large amounts of foliage. They use their chewing mouthparts to feed, leaving behind little more than the large leaf veins. Just a few hornworms may cause significant defoliation in small gardens. The horn on the rear end is harmless; therefore, remove hornworms by hand when found.

Stink bugs and Leaf-footed Bugs

Stink bugs (various species in the insect family Pentatomidae) and leaf-footed bugs (*Leptoglossus phyllopus*) feed on young developing fruit by inserting their piercing, sucking mouthparts. This frequently leads to a discolored spot beneath the skin that becomes evident when the fruit is sliced. The spot may be depressed on the outside of the fruit. Both juveniles and adults feed on developing fruit. Small amounts of feeding damage often go unnoticed, though populations may occasionally build up to problematic levels.

Leaf-footed bug adults and nymph sitting on an eggplant leaf.
Justin Ballew, ©2020, Clemson Extension

Spider Mites

Spider mite feeding damage on an eggplant leaf.
Justin Ballew, ©2020, Clemson Extension

Two spotted spider mites (*Tetranychus* urticae) may become a pest on eggplant foliage, especially after the use of broad spectrum insecticides. Typically, spider mites feed on the lower surfaces of leaves by inserting their piercing, sucking mouthparts, and extracting the plant's sap. Populations may increase rapidly in times of hot, dry weather. Large populations may create webbing on the foliage and cause a yellow stippling symptom to develop on the foliage as they feed.

Strategies for Insect Management in Eggplant

Cultural control includes proper fertilization according to the results of a soil test. Avoid over fertilizing with nitrogen, as this can make plants more attractive to aphids. In addition, manage weeds before they begin flowering and producing seeds in and around the garden, which may harbor insect pests and provide overwintering sites.

Mechanical control includes handpicking insects. This is an easy strategy for larger, slow-moving insects, such as hornworms and Colorado potato beetles. Pick the insect off the plant and squish it or drop it in a bottle of soapy water.

To promote biological control, provide habitats for beneficial insects. Small flowering plants, such as sweet alyssum, dill, cilantro, fennel, and rosemary, attract parasitic wasps and flies that prey on aphids, caterpillars, stink bugs, and leaf-footed bugs. Broad spectrum insecticides will kill beneficial insects; therefore, avoid using these products unless absolutely necessary.

For chemical control, see products labeled for use in eggplant in the tables below.

Table 1. Insecticides for Control of Insect Pests of Eggplant.

Pest	Active Ingredient	Notes
Aphids and Whiteflies	Acetamiprid	Broad Spectrum
	Bifenthrin	Broad Spectrum
	Imidacloprid	Broad Spectrum. Apply at or shortly after transplanting.
	Insecticidal Soap	Less impact on beneficials. No residual activity.
	Malathion	Broad spectrum
Flea Beetles	Bifenthrin	Broad spectrum
	Cyfluthrin	Broad spectrum
	Gamma-cyhalothrin	Broad spectrum
	Permethrin	Broad spectrum
Worms and Colorado Potato Beetle	Bifenthrin	Broad spectrum
	Gamma-cyhalothrin	Broad spectrum
	Permethrin	Broad spectrum
	Spinosad	Less impact on beneficials
Stink Bugs and Leaffooted Bugs	Bifenthrin	Broad spectrum
	Cyfluthrin	Broad spectrum
	Gamma-cyhalothrin	Broad spectrum
	Permethrin	Broad spectrum
Spider Mites	Insecicidal Soap	Less impact on beneficials. No residual activity.
	Malathion	Broad spectrum

Table 2. Insecticide Products to Control Eggplant Insect Pests.

Active Ingredient	Examples of Product Names	Pre-harvest Interval

Bifenthrin	Monterey Mite & Insect Control Conc. Ferti-Lome Broad Spectrum Insecticide	7
Cyfluthrin	Bayer BioAdvanced Vegetable & Garden Insect Spray	7
Gamma-cyhalothrin	Spectracide Triazicide Insect Killer for Lawns & Landscapes	5
Insecticidal Soap	Espoma Earth-tone Insecticidal Soap Natural Guard Insecticidal Soap Safer Brand Insect Killing Soap	0
Malathion	Ortho Max Malathion Insect Spray Southern Ag Malathion 50% EC Bonide Malathion Insect Control Martin's Malathion 57%	3
Permethrin	Bonide Eight Insect Control Vegetable, Fruit & Flower	3
Spinosad	Southern Ag Conserve Naturalyte Insect Control Bonide Colorado Potato Beetle Beater Bonide Captain Jack's Deadbug Brew Ferti-lome Borer, Bagworm & Leafminer Spray Monterey Garden Insect Spray	1

The pre-harvest (PHI) interval is the waiting time in days after spraying before harvesting.

Insecticidal soap sprays are best applied in the early morning or the late evening to slow drying time.

Broad spectrum insecticides are best sprayed in late evening to lessen the impact on pollinating insects.

Plant Diseases

Phytophthora nicotianae causes fruit rot symptoms on eggplant.
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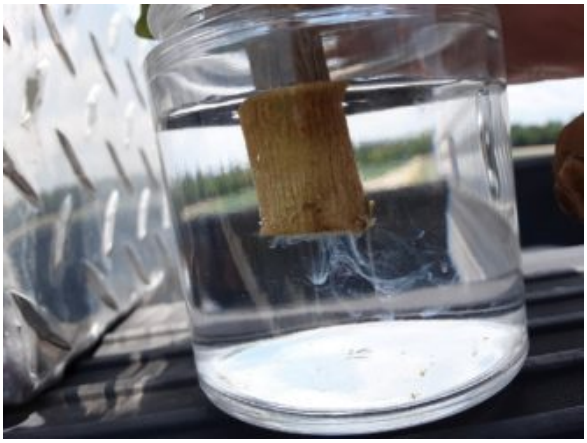
Phytophthora Blight

Phytophthora blight (caused by *Phytophthora capsici* or *P. nicotianae*) is a water mold that may attack eggplant roots, leaves, stems, or fruit. Symptoms include dark streaking on the upper branches of the plant, followed by the rapid collapse of the plant and death. Avoiding excessive soil moisture is an important strategy for managing *Phytophthora* diseases.

Bacterial Wilt

Bacterial wilt (caused by *Ralstonia solanacearum*) is a serious bacterial disease that causes sudden wilting of the plant. The entire plant withers and dies quickly following infection. The pith inside the stem turns reddish-brown, and there is relatively little yellowing of the leaves. To avoid bacterial wilt, do not plant eggplant in areas that have had tomatoes, Irish potatoes, or eggplant planted in the previous three years. Proper crop rotation is important in helping to avoid the buildup of soilborne pathogens.

Several eggplants that have wilted and died because of infection by bacterial wilt.
Justin Ballew, ©2020, Clemson Extension



Bacterial ooze streaming from the cut stem of an eggplant suspended in water is a good way to test for bacterial wilt.
Justin Ballew, ©2020, Clemson Extension

Southern Blight

Symptoms of southern blight (caused by *Athelia rolfsii*) are found on the stems at the surface of the soil. As the disease progresses, a white mat of fungal mycelium (threadlike growth) develops around the base of the stem, rotting the stem and causing the plant to yellow, wilt, and die. Small, round, brown and tan pellets called sclerotia, which are the survival structures, form and drop into the soil. Sclerotia remain viable in the soil for several years until the next susceptible crop is planted. Avoid planting in areas where tomatoes, peppers, snap beans, or eggplants were planted in the last 3 years. In addition, remove infected plants from the garden.

Deteriorated Eggplant stem infected with Southern blight. Several sclerotia are present.
Justin Ballew, ©2020, Clemson Extension

Phomopsis Blight

Phomopsis blight (caused by *Phomopsis vexans*) is a fungal disease that most commonly attacks the fruit, but the collar rot stage can cause the stem to become narrower than normal and break off at about 1 to 2 inches above the soil line. Leaves may also have gray or brown spots that are rounded or oval-shaped. Fruit spots start as pale, sunken areas that rapidly enlarge to become soft and spongy down into the flesh. Phomopsis blight is more common in the fall than in the spring.

Strategies for Managing Diseases in Eggplant

Crop rotation is an important strategy for managing bacterial wilt, Phytophthora blight, and southern blight because the pathogens survive in soil. Avoid planting eggplant where tomatoes, potatoes, peppers, or eggplant (all members of the Solanaceae family) were planted within the last

Phomopsis blight commonly attacks and rots the fruit.
Dr. Anthony Keinath, ©2020, Clemson Extension

three years. Instead, rotate with cucurbits (squash, zucchini, melons, and cantaloupe), brassicas (collards, kale, cabbage, turnips, and broccoli), grasses (sweet corn and grains), alliums (onions, garlic, and leeks), etc.

Proper plant spacing allows air to flow between plants, promoting faster drying of foliage following rain or dew. This is helpful in reducing foliar diseases and fruit rots. Space rows 36 inches apart, and space plants 24 to 30 inches apart on the row. Align rows east to west rather than north to south to allow air movement up and down the rows.

Proper water management is important for avoiding a variety of disease issues. Drip irrigation is the preferred method of watering versus overhead watering, as this keeps water off the foliage and fruit, reducing the severity of foliar diseases and fruit rots. If unable to drip irrigate, direct water to the base of the plants and avoid wetting the leaves as much as possible. Additionally, water early in the day to give the foliage a chance to dry before dark. Water frequently enough to keep the soil moist but not saturated. Excessive soil moisture increases the incidence of root rots and blight caused by *Phytophthora* and *Pythium*.

For chemical disease management, see products labeled for use on home garden eggplant in the tables below.

Table 3. Fungicides for Use in Home Gardens for Eggplant Disease Control.

Pest	**Active Ingredient**	**Notes**
Phomopsis and Foliar Diseases	Copper	Preventative only
	Chlorothalonil	Preventative only
Phytophthora blight	Potassium phosphite	Apply as a drench
	Copper	Preventative only

Table 4. Fungicide Products to Control Eggplant Diseases.

Active Ingredient	**Examples of Product Names**	**Pre-harvest Interval**
Copper-based Fungicides	Bonide Liquid Copper Concentrate Bonide Copper Spray or Dust Monterey Liqui-Cop Ortho Elementals Garden Disease Control Dupont Copper Kocide 3000 Southern Ag Liquid Copper Fungicide	0
Chlorothalonil	Ortho Garden Disease Control Hi-Yield Vegetable, Flower & Ornamental fungicide Bonide Fungonil Gardentech Daconil	7
Potassium phosphite	Monterey Garden Phos Organocide Plant Doctor	0
The pre-harvest interval (PHI) is the waiting time in days after spraying before harvesting.		

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